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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/606,721	06/26/2003	Ian Robinson	NG(ST)-6445	5804
26294	7590	12/08/2006	EXAMINER	
TAROLLI, SUNDHEIM, COVELL & TUMMINO L.L.P. 1300 EAST NINTH STREET, SUITE 1700 CLEVEVLAND, OH 44114			BURD, KEVIN MICHAEL	
			ART UNIT	PAPER NUMBER
			2611	

DATE MAILED: 12/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/606,721

Applicant(s)

ROBINSON ET AL.

Examiner

Kevin M. Burd

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-6, 9-11, 14, 15 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Leva et al (US 2002/0061068).

Regarding claims 1, 9-11, 14 and 17, Leva discloses a communication device that modifies an input signal to reduce peak signals associated with the input signal. This is shown in figures 1-3 and paragraph 0011. A power amplifier will amplify the compensated signal (paragraph 0007) and the receiver is able to restore the original signal (paragraph 0011).

Regarding claim 2, Leva discloses a signal shaper as shown in figure 1 that reduces peak signals.

Regarding claims 3, 4, 15, 18 and 19, figures 1-3 disclose the combining of an instruction signal with the input signal to generate a peak reduced signal.

Regarding claim 5, Leva discloses the PAR reduction is used in an OFDM system (paragraph 0043).

Regarding claim 6, Leva discloses the DAC that converts the peak reduced signal to an analog signal prior to transmission (paragraph 0043).

2. Claims 12, 13, 20 and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Muller et al "OFDM with Reduced Peak-to-Average Power Ratio by Multiple Signal Representation", vol. 52, no. 1/2, 2/1997, XP 000991143.

Regarding claims 12, 13, 20 and 21, Muller discloses a method and apparatus for splitting an input signal into a plurality of replica signals (figure 5). The replica signals are scaled to reduce the peak values (figure 5 and page 63). The signals are combined in the adder of figure 5. The combined signal is amplified by a power amplifier (page 59).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 7, 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Leva et al (US 2002/0061068) in view of Muller et al "OFDM with Reduced Peak-to-Average Power Ratio by Multiple Signal Representation", vol. 52, no. 1/2, 2/1997, XP 000991143.

Regarding claims 7, 8 and 16, Leva discloses the method and apparatus stated in paragraph 1. Leva does not disclose a signal splitter that splits the input signal into a plurality of replicas wherein each of the plurality of replica signals has a maximum value below the maximum value of the input signal. Muller discloses a method and apparatus

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for splitting an input signal into a plurality of replica signals (figure 5). The replica signals are scaled to reduce the peak values (figure 5 and page 63). The signals are combined in the adder of figure 5. The combined signal is amplified by a power amplifier (page 59). This method combines partial transmit sequences to minimize the peak-to-average power ratio and prevents the power amplifier from being overwhelmed (muller-abstract). For these reasons, it would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Muller into the method and apparatus of Leva.

### ***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on (571) 272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin M. Burd  
12/6/2006

  
**KEVIN BURD**  
**PRIMARY EXAMINER**